AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (Canceled)

2. (Original) A method as claimed in claim 30 [[1]] and comprising emitting seismic energy from an array of marine vibrators, the array of marine vibrators comprising at least a first vibrator at a first depth and a second vibrator at a second depth greater than the first depth.

3. (Original) A method as claimed in claim 2 wherein the first vibrator of the array is displaced with respect to the second vibrator in the direction of emission of seismic energy.

4. (Original) A method as claimed in claim 2 or 3 and further comprising starting emission of seismic energy from the second vibrator a pre-determined time after starting emission of seismic energy from the first vibrator.

5. (Original) A method as claimed in claim 4 wherein the pre-determined time is substantially equal to the time taken for seismic energy emitted from the first vibrator to reach the second vibrator.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Currently Amended) A method of seismic surveying using one or more marine vibrators ~~as claimed in claim 1~~, the method comprising:

emitting seismic energy at two or more different depths during a sweep; and

varying the depth of a marine vibrator while the marine vibrator is emitting seismic energy.

20. (Allowed) A method as claimed in claim 19 and further comprising the step of varying the frequency of the seismic energy emitted from the marine vibrator.

21. (Allowed) A method as claimed in claim 20 wherein the frequency of the seismic energy emitted from the marine vibrator is varied such that the ratio of the depth of the marine vibrator to the wavelength of the seismic energy emitted from the marine vibrator is substantially constant.

22. (Allowed) A method as claimed in claim 21 wherein the ratio of the depth of the marine vibrator to the wavelength of the seismic energy emitted from the marine vibrator is approximately one quarter.

23. (Allowed) A method as claimed in any of claims 19 to 22 wherein the depth of the marine vibrator is reduced while the marine vibrator is emitting seismic energy.

24. (Allowed) A method as claimed in claim 23 wherein the initial depth is 50m, the initial frequency is 7.5Hz, the final depth is 5m and the final frequency is 75Hz.

25. (Previously Presented) A seismic surveying arrangement comprising:

a vessel;

a marine vibrator;

means for suspending the marine vibrator from the vessel;

a first control means for causing the marine vibrator to emit seismic energy; and

a second control means for varying the depth of the marine vibrator as it emits the seismic energy.

26. (Allowed) An arrangement as claimed in claim 25 wherein the second control means is adapted to control the depth of the marine vibrator on the basis of the wavelength of the seismic energy emitted by the marine vibrator.

27. (Allowed) An arrangement as claimed in claim 26 wherein the second control means is adapted to control the depth of the marine vibrator such that the ratio of the depth of the marine vibrator to the wavelength of the seismic energy emitted from the marine vibrator is substantially constant.

28. (Allowed) An arrangement as claimed in claim 27 wherein the second control means is adapted to control the depth of the marine vibrator such that the ratio of the depth of the marine vibrator to the wavelength of the seismic energy emitted by the marine vibrator is approximately one quarter.

29. (Currently Amended) An arrangement as claimed in any one of claims 25 to 28 wherein the first control means is the second control means.

30. (Currently Amended) A method of seismic surveying using one or more marine vibrators, the method ~~A method as claimed in claim 1 further~~ comprising:

emitting seismic energy at two or more different depths during a sweep; and

determining the preferred depths, the determination including:

a) assigning a depth to each seismic source in the array;

b) for each seismic source in the array, obtaining the amplitude spectrum of seismic energy emitted by the seismic source;

c) summing the results of step (b) to obtain the amplitude spectrum of seismic energy emitted by the array of seismic sources; and

d) generating a parameter indicative of a property of the amplitude spectrum of seismic energy emitted by the array of seismic sources.